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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,084	07/14/2003	Shinji Arai	03410/LH	7394
1933	7590	04/23/2004	EXAMINER	
FRISHAUF, HOLTZ, GOODMAN & CHICK, PC			THOMAS, ERIC W	
767 THIRD AVENUE			ART UNIT	
25TH FLOOR			PAPER NUMBER	
NEW YORK, NY 10017-2023			2831	

DATE MAILED: 04/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/620,084	Applicant(s) ARAI ET AL. 	
	Examiner Eric W Thomas	Art Unit 2831	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 7/14/03.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13-18 is/are allowed.
- 6) ☒ Claim(s) 1,6-8 and 10-12 is/are rejected.
- 7) ☒ Claim(s) 2-5, 9, 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 July 2003 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>7/14/03</u> . | 6) <input type="checkbox"/> Other: _____ |

Introduction:

The examiner acknowledges, as recommended in M.P.E.P. 707.04, the applicant's submission of the amendment dated 7/14/03. At this point, claims 6-7, 11-12 have been amended and claim 19 has been added. Thus, claims 1-19 are pending in the instant application.

DETAILED ACTION

Specification

1. A substitute specification in proper idiomatic English and in compliance with 37 CFR 1.52(a) and (b) is required. The substitute specification filed must be accompanied by a statement that it contains no new matter.

Claim Objections

2. Claim 5 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim *cannot depend from any other multiple dependent claim*. See MPEP § 608.01(n). Accordingly, the claim 5 has not been further treated on the merits.

3. Claims 1, 3-4, 8, 10-12, 19 are objected to because of the following informalities:

Claim 1, lines 10-12, the limitation, "except the first electrolyte layer" is confusing. Does this mean the first electrolyte layer does not contain the non-conductive particles?

Claim 3, line 2-3, the limitation, "said second electrolyte layer is formed after said non-conductive particles are positioned in such a way" is confusing. It is suggested to applicant to change this limitation to --said second electrolyte layer is formed after said non-conductive particles, said non-conductive particles are positioned in such a way--.

Claim 4, lines 2-3, the limitation, "said non-conductive particles are positioned on the surface of the dielectric layer and in said first electrolyte layer" is confusing (in view of the claim objections with regard to claim 1). Are the non-conductive particles contained in the first and second electrolyte?

Claim 4, line 3, the limitation, "said second electrolyte layer being formed" is confusing. It is suggested to applicant to change this limitation to –said second electrolyte layer being formed on the first electrolyte layer--.

Claim 4, lines 4-5, the limitation, "said non-conductive particles are not in a direct contact" is confusing. It is suggested to applicant to change this limitation to –said non-conductive particles are not in [a] direct contact--.

Claim 8 is confusing. Are the conductive particles claimed in addition to the particles already claimed in claim 1?

Claim 10, lines 1-2, the limitation, "wherein the first electrolyte layer includes a carbon-based conductive filler" is confusing. Is this in addition to the conductive particles already claimed?

Claim 11, line 3, the limitation, "polymer including non-conductive particles" is confusing. Are these the same particles that were already claimed? It is suggested to applicant to change this limitation to –polymer including the non-conductive particles--.

Claim 12, line 2, replace "by" with –of—

Claim 19, line 2-3, the limitation, "said non-conductive particles are positioned on the surface of the dielectric layer and in said first electrolyte layer" is confusing (in view

of the claim objections with regard to claim 1). Are the non-conductive particles contained in the first and second electrolyte?

Claim 19, line 4, the limitation, "said second electrolyte layer being formed" is confusing. It is suggested to applicant to change this limitation to --said second electrolyte layer being formed on the first electrolyte layer--.

Claim 19, line 6, the limitation, "said non-conductive particles are not in a direct contact" is confusing. It is suggested to applicant to change this limitation to --said non-conductive particles are not in [a] direct contact--.

Appropriate correction is required.

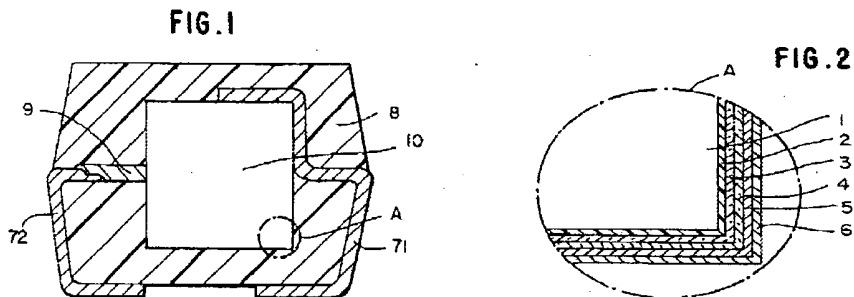
Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1, 6-8, 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arai et al. (US 5,621,608) in view of Sakara et al. (US 5,473,503).



Arai et al. disclose in fig. 1 & 2, a solid electrolytic capacitor comprising a lead wire (9); an anode member (1) formed by a sintered member of a valve-action metal powder and embedding therein the lead wire; a dielectric layer (2) formed on a surface of the anode member, a first electrolyte layer (3) formed on the dielectric layer; a cathode member (5) formed on the first electrolyte layer; a silver paste layer (6) formed on the cathode member, external terminals (71,73) respectively connected to the lead wire and the silver paste layer; and a resin package molded (8) so as to expose the external terminals, said solid electrolytic capacitor further comprising non-conductive particles (silica) between the dielectric layer and the cathode member, and a second electrolyte layer (4) formed between the dielectric layer and the cathode member, wherein the second electrolyte layer is formed so as to contain the non-conductive particles.

Arai et al. disclose the claimed invention except for the first electrolyte layer includes particles constituting the cathode member.

Sakara et al. teach the use of graphite particles formed within an electrolytic layer (see fig. 1B – element 5).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the capacitor of Arai et al. by using a graphite powder material in the first electrolyte layer, since such a modification would increase the surface area of the electrolyte layer and improve contact resistance.

Regarding claim 6, Arai et al. disclose the valve action metal is a tantalum (see col. 3 lines 15-30).

Regarding claim 7, Arai et al. disclose the first electrolyte layer comprises a polypyrrole (see col. 3 lines 15-20).

Regarding claim 8, Sakara et al. teach that the conductive power is a graphite powder (example 10).

Regarding claim 10, Sakara et al. teach that the conductive power is a graphite powder (example 10).

Regarding claim 11, Arai et al. disclose the second electrolyte layer having the conductive particles is formed of a conductive polymer having conductive particles between the cathode member and graphite particles.

Regarding claim 12, Arai et al. disclose the cathode is formed of graphite.

Allowable Subject Matter

7. Claims 2-4, 9, 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Claims 13-18 are allowed.

9. The following is a statement of reasons for the indication of allowable subject matter: The prior art does not teach or fairly suggest (taken in combination with the other claimed features) the non-conductive particles are positioned in an area constituting a recess on the dielectric layer (claims 2,4/2); the interface between the first electrolyte layer and the dielectric layer to a surface of the anode member is smaller than an averaged thickness of the first electrolyte layer (claims 3, 4/3, 19); the conductive powder is covered by at least either of TiO₂ and BaSO₄ (claim 9); and immersing the anode member having the first electrolyte layer in a colloid solution in which non-conductive colloid particles are dispersed, followed by drying (claims 13-18).

Conclusion

In order to ensure full consideration of any amendments, affidavits, or declaration, or other documents as evidence of patentability, such documents must be submitted in response to this Office action. Submissions after the next Office action, which is intended to be a final action, will be governed by the requirements of 37 CFR 1.116 which will be strictly enforced.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

6,430,033 – solid electrolytic capacitor comprising multiple electrolyte layers.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric W Thomas whose telephone number is (571) 272-

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1985. The examiner can normally be reached on M, T, Sa 9:00AM - 9:30PM; W, Th, F 5:30PM-10:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on (571) 272-1984. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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